Conclusion

Prior to taking this application up for examination, the Examiner is asked to enter the above amendments. The Examiner is invited to contact Applicants' Representatives, Ann M. Mueting, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby. It is respectfully requested that the application be moved forward to allowance.

Respectfully submitted,

EVERAERTS et al.

By their representatives,

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February 28, 2001
Date

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CERTIFICATE UNDER 37 C.F.R. 1.8:
The undersigned hereby certifies that this paper is being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on this 28 day of February, 2001.

Ann M. Mueting
Name: Ann M. Mueting

PATENT
Docket No. 55695 USA 8A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	EVERAERTS et al.	Group Art Unit:	3733
Serial No.:	09/697,008	Examiner:	Unknown
Filed:	25 October 2000		

For: IMAGEWISE PRINTING OF ADHESIVES AND LIMITED COALESCENCE POLYMERIZATION METHOD

APPENDIX A - Pending Claims with Mark-Ups

1. A method of applying an adhesive to a substrate in an imagewise fashion; the method comprising:

providing a substrate having a latent adhesive image thereon; and

applying a plasticizing agent to activate the latent adhesive image to form an adhesive image.

2. The method of claim 1 wherein providing a substrate having a latent adhesive image thereon comprises:

providing a substrate;

applying a latent adhesive toner in an imagewise fashion to the substrate; and

fusing the latent adhesive toner to the first substrate to form a latent adhesive image.

3. The method of claim 2 wherein the latent adhesive toner comprises latent adhesive particles comprising a latent pressure sensitive adhesive comprising a copolymer having a Tg greater than about 10°C which is formed from components comprises:

about 50 wt% to about 70 wt% of a high Tg comonomer component, wherein the homopolymer formed from the high Tg comonomer component has a Tg of at least about 20°C;

optionally, up to about 20 wt% based on the total weight of the base copolymer of an acidic comonomer; and

about 30 wt% to about 50 wt% of one or more low Tg (meth)acrylate comonomer, wherein the Tg of the homopolymer of the low Tg comonomer is less than about 20°C, and

4. The method of claim 3 wherein the high Tg comonomer component is an ethylenically unsaturated monomer or mixture thereof.

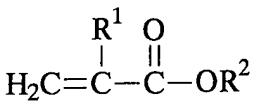
5. The method of claim 3 wherein the high Tg comonomer component is selected from the group consisting of lower alkyl (C1-C4) methacrylates, vinyl esters, N-vinyl lactams, substituted (meth)acrylamides, maleic anhydride, (meth)acrylate esters of cycloalkyl, aromatic or bridged cycloalkyl alcohols, styrene, substituted styrene or mixtures thereof.

6. The method of claim 3 wherein the high Tg comonomer component is selected from the ethyl methacrylate, methyl methacrylate, isobornyl acrylate, isobornyl methacrylate, 4-t-butyl cyclohexyl methacrylate, 4-t-butyl cyclohexyl acrylate, cyclohexyl methacrylate, N,N-dimethyl acrylamide, N,N-dimethyl methacrylamide, acrylonitrile, and mixtures thereof.

7. The method of claim 3 wherein the low Tg (meth)acrylate comonomer is a monofunctional unsaturated monomer.

8. The method of claim 3 wherein the monofunctional unsaturated monomer is a (meth)acrylate ester of non-tertiary alkyl alcohols, the alkyl group of which comprise from 1 to about 18 carbon atoms; and mixtures of (meth)acrylate esters of non-tertiary alcohols.

9. The method of claim 3 wherein the (meth)acrylate monomer, when homopolymerized has a Tg below 20°C and has the general formula:



wherein R^1 is H or CH_3, the latter corresponding to where the (meth)acrylate monomer is a methacrylate monomer and R^2 is selected from linear or branched hydrocarbon groups and may contain one or more heteroatoms and the number of carbon atoms in the hydrocarbon group is 1 to about 18.

10. The method of claim 9 wherein the (meth)acrylate monomers are selected from the group consisting of n-butyl acrylate, ethoxyethoxyethyl acrylate, 2-ethylhexyl acrylate, isooctyl acrylate, lauryl acrylate, and mixtures thereof.

11. The method of claim 3 wherein the acidic comonomer is ethylenically unsaturated carboxylic acid, ethylenically unsaturated sulfonic acid, ethylenically unsaturated phosphonic acid and mixtures thereof.

12. The method of claim 11 wherein the acidic comonomer is acrylic acid, ß-carboxyethyl acrylate and methacrylic acid.

13. The method of claim 1 wherein the plasticizing agent is non-volatile.

14. The method of claim 1 wherein the plasticizing agent is non-reactive.

15. The method of claim 1 wherein the plasticizing agent is an ester of a mono- or multibasic acid.

16. The method of claim 1 wherein the plasticizing agent is a polyurethane, polyurea, polyvinylether, polyether, polyester, polyacrylate, or mixtures thereof.

17. The method of claim 14 wherein the plasticizing agent is selected from the group consisting of polyalkylene oxides having weight average molecular weights of about 150 to about 5,000; alkyl or aryl functionalized polyalkylene oxides; benzoyl functionalized polyethers;

monomethyl ethers of polethylene oxides; monomeric adipates; polymeric adipates; citrates; phthalates; phosphate esters; glutarates; and mixtures thereof.

18. The method of claim 2 wherein the latent adhesive further comprises one or more of an initiator, at least one chain transfer agent, and at least one crosslinking agent.

19. The method of claim 2 wherein applying a latent adhesive toner comprises applying the toner in an electrophotographic process, a magnetic process, or an electrostatic process.

20. The method of claim 19 wherein applying a latent adhesive toner comprises applying the toner in an electrophotographic process or a magnetic process.

21. The method of claim 19 wherein applying a latent adhesive toner comprises applying the toner in an electrophotographic process.

22. The method of claim 2 wherein the latent adhesive toner comprises latent adhesive particles comprising a latent, over-tackified, pressure sensitive adhesive.

23. The method of claim 22 wherein the latent over-tackified pressure sensitive adhesive comprises a natural rubber, synthetic rubber, styrene block copolymer, (meth)acrylic, poly(alpha-olefin), or silicone.

24. A method of adhering substrates together using an adhesive printed in an imagewise fashion; the method comprising:

applying a latent adhesive toner in an imagewise fashion to a first substrate, wherein the latent adhesive toner comprises single-composition latent adhesive particles;

fusing the latent adhesive toner to the first substrate to form a latent adhesive image;

activating the latent adhesive image to form an adhesive image; and

applying a second substrate to the adhesive image disposed on the first substrate.

25. The method of claim 24 wherein the latent adhesive toner comprises latent adhesive particles comprising an acrylic, urethane, phenolic, polyimide, cyanate ester, or epoxy.

26. The method of claim 24 wherein the latent adhesive toner comprises latent adhesive particles comprising an acrylic polymer with crystalline side chains.

27. The method of claim 24 wherein the latent adhesive toner comprises latent adhesive particles comprising an epoxy acrylic or epoxy polyester structural or semi-structural adhesive.

28. The method of claim 24 wherein the latent adhesive toner comprises latent adhesive particles comprising a polyester or polyamide adhesive.

29. A method of adhering substrates together using an adhesive printed in an imagewise fashion; the method comprising:

applying a latent adhesive toner in an imagewise fashion to a first substrate, wherein the latent adhesive toner comprises structural or semi-structural latent adhesive particles;

fusing the latent adhesive toner to the first substrate to form a latent adhesive image;

activating the latent adhesive image to form an adhesive image; and

applying a second substrate to the adhesive image disposed on the first substrate.

30. A method of making a latent adhesive toner comprising polymer particles, the method comprising:

providing polymerizable monomers and a colloidal stabilizer under conditions effective to form a polymer;

subjecting the polymer to shearing forces to form polymer particles of 1 micron or less particle size; and

adjusting the pH to reduce the amount of coagulation of the polymer particles.

31. (New) The method of claim 2 wherein the latent adhesive toner comprises latent adhesive particles having a number average particle size of about 5 microns to about 25 microns.

32. (New) The method of claim 24 wherein the latent adhesive particles have a number average particle size of about 5 microns to about 25 microns.

33. (New) The method of claim 29 wherein the latent adhesive particles have a number average particle size of about 5 microns to about 25 microns.

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APPENDIX B – New Claims

31. (New) The method of claim 2 wherein the latent adhesive toner comprises latent adhesive particles having a number average particle size of about 5 microns to about 25 microns.

32. (New) The method of claim 24 wherein the latent adhesive particles have a number average particle size of about 5 microns to about 25 microns.

33. (New) The method of claim 29 wherein the latent adhesive particles have a number average particle size of about 5 microns to about 25 microns.